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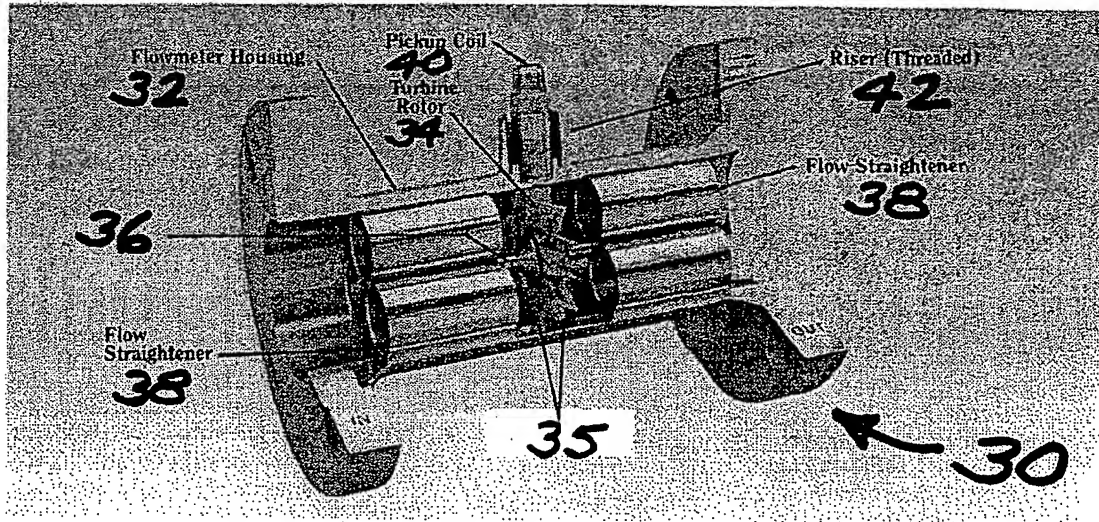


FIG. 1
(PRIOR ART)

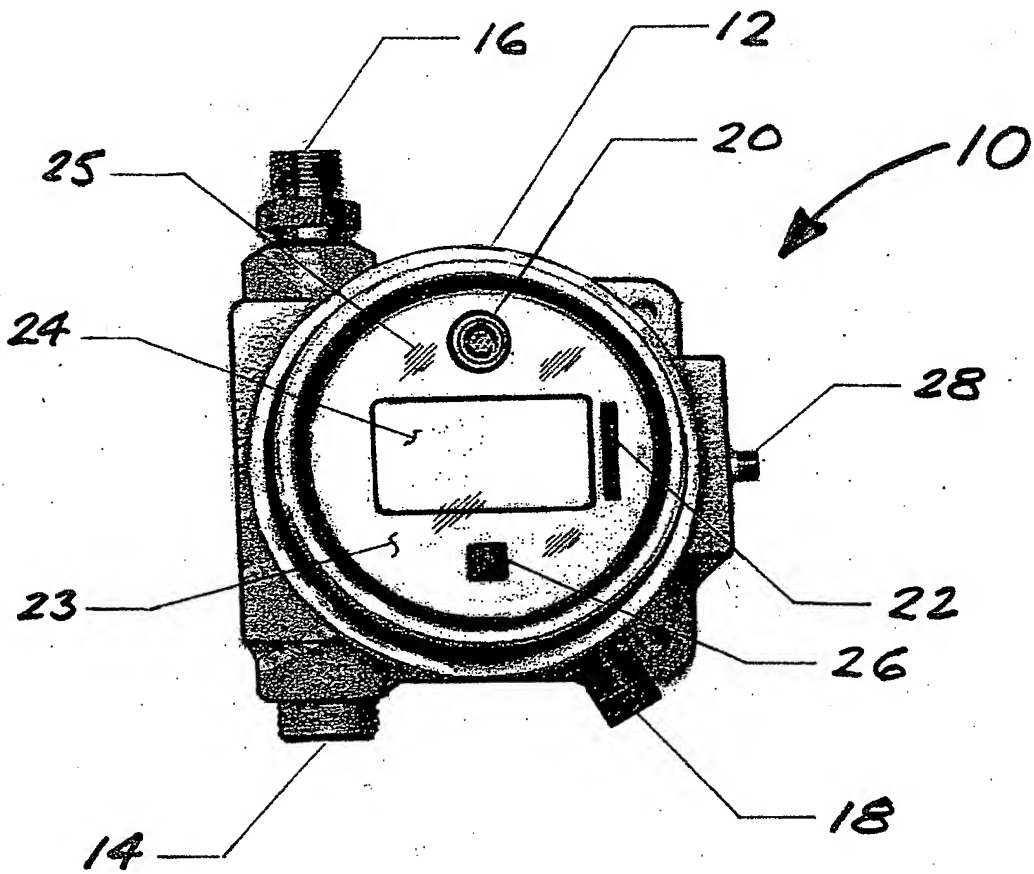
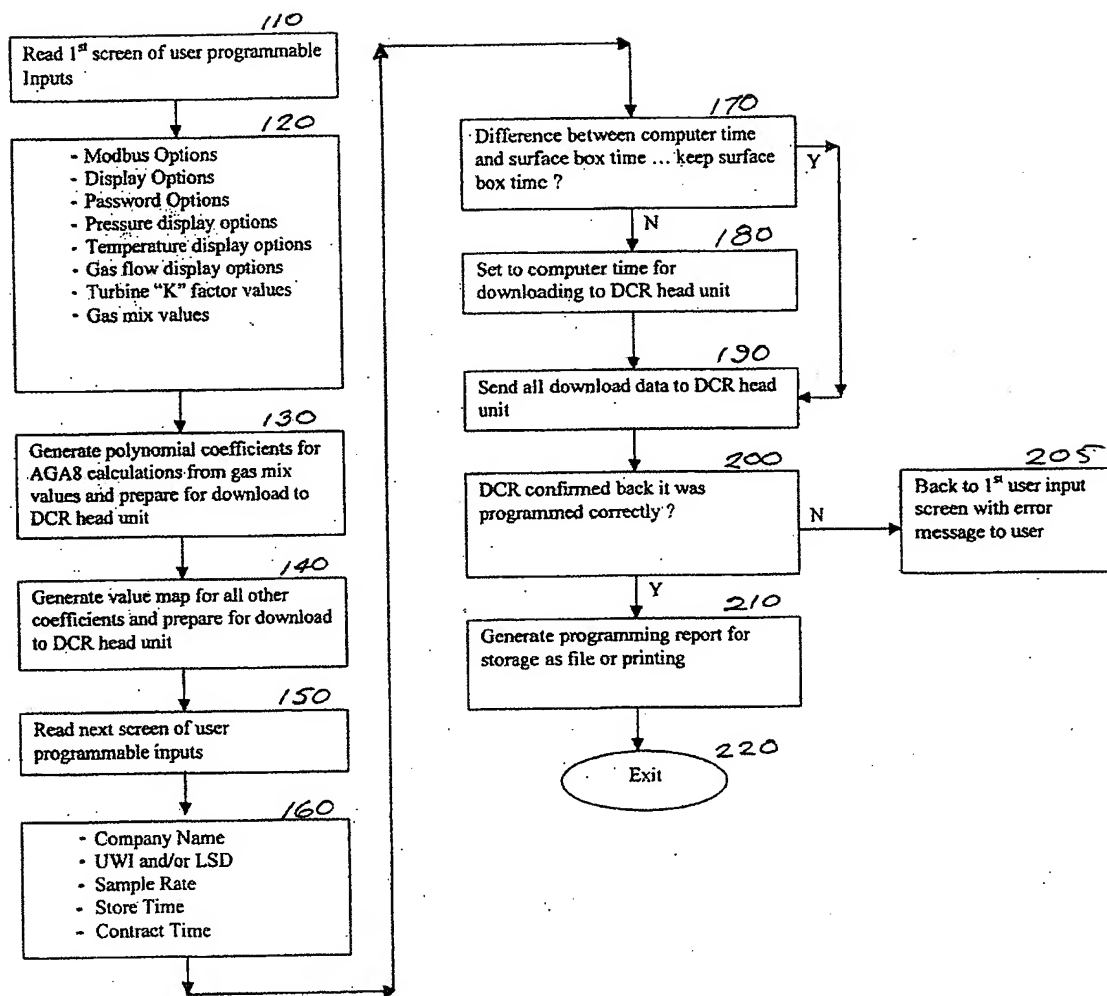
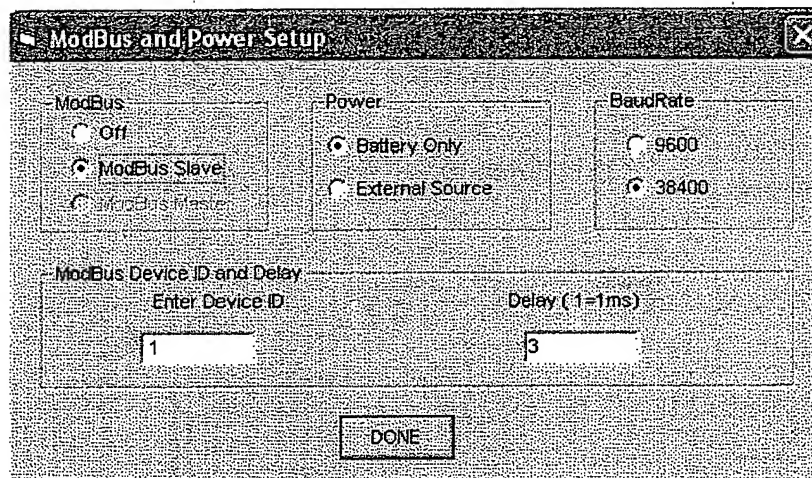


FIG. 2

FIG. 4



ModBus and Power Setup

ModBus

☐ Off

☒ ModBus Slave

☐ ModBus Master

Power

☒ Battery Only

☐ External Source

BaudRate

☐ 9600

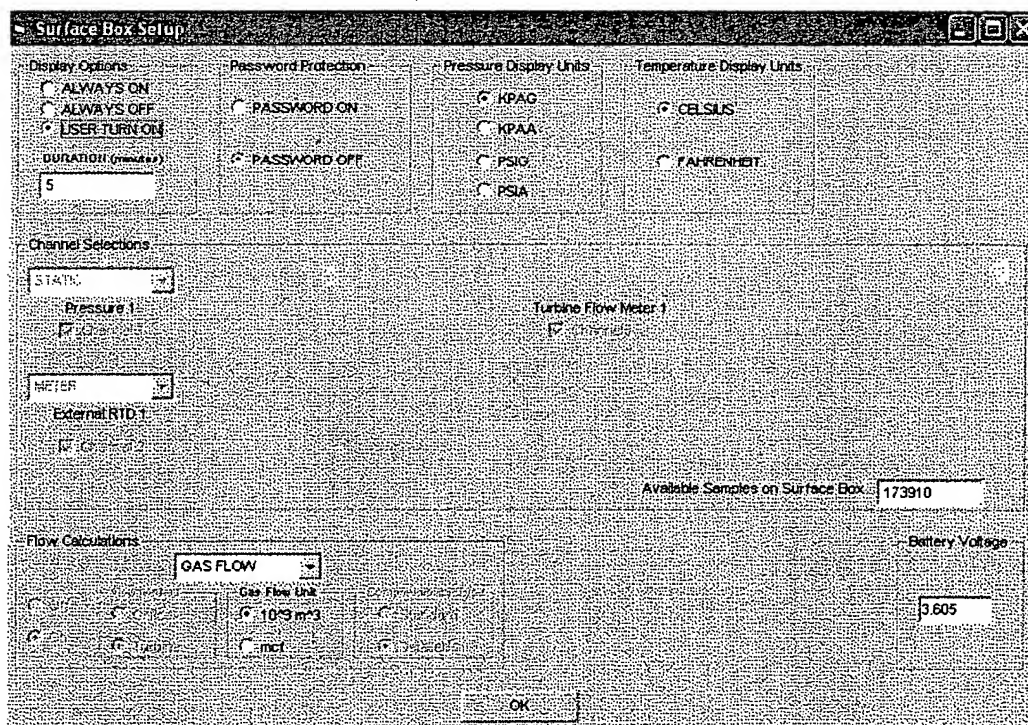
☒ 38400

ModBus Device ID and Delay

Enter Device ID:

Delay (1=1ms):

DONE

FIG. 4A

Surface Box Setup

Display Options

☐ ALWAYS ON

☐ ALWAYS OFF

☒ USER TURN ON

DURATION (minutes):

Password Protection

☐ PASSWORD ON

☒ PASSWORD OFF

Pressure Display Units

☒ KPAG

☐ KPAA

☐ PSIG

☐ PSIA

Temperature Display Units

☒ CELSIUS

☐ FAHRENHEIT

Channel Selections

STATN:

Pressure 1: ☒ ON

External RID 1: ☒ ON

Turbine Flow Meter 1: ☒ ON

Available Samples on Surface Box:

Flow Calculations

GAS FLOW

☐ Gas Flow Unit: ☒ 10³ m³

☐ Gas Flow Unit: ☐ mcf

☐ Gas Flow Unit: ☐ 10³ scf

☐ Gas Flow Unit: ☐ 10³ gal

Battery Voltage

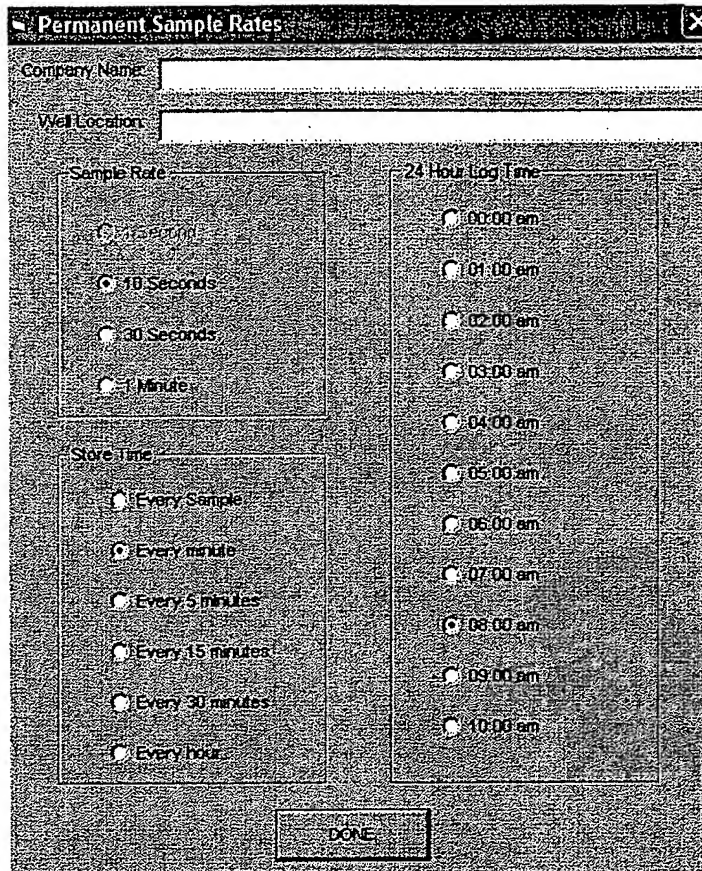
OK

FIG. 4B

Gas Mix Analysis		GAS PARAMETERS	
Mole Fractions(%)		Atmospheric	13.488 psi
		AGA Base Condition	60 Deg F 14.7 psia
		TURBINE K FACTOR	
		Turbine Serial Number	333
		FREQUENCY (Hz)	K FACTOR
Methane > 0.5 pr < 1.0 (C1)	1	1 3000	500
Nitrogen < 0.5 (N2)	0	2 2675	500
Carbon dioxide < 0.3 (CO2)	0	3 2350	500
Ethane < 0.2 (C2)	0	4 2025	500
Propane < 0.05 (C3)	0	5 1700	500
Water < 0.0015 (H2O)	0	6 1375	500
Hydrogen sulfide < 0.0002 (H2S)	0	7 1050	500
Hydrogen < 0.10 (H2)	0	8 725	500
Carbon monoxide < 0.03 (CO)	0	9 400	500
Oxygen < 0.0002 (O2)	0	10 75	500
Iso-Butane (iC4)	0		
n-Butane (nC4)	0		
Iso-Pentane (iC5)	0		
n-Pentane (nC5)	0		
n-Hexane < 0.001 (nC6)	0		
n-Heptane < 0.0005 (nC7)	0		
n-Octane (nC8)	0		
n-Nonane (nC9)	0		
n-Decane (nC10)	0		
Helium < 0.005 (He)	0		
Argon < 0.0002 (Ar)	0		
Sum of Fractions(%)	1	<input type="radio"/> 1 Factor <input checked="" type="radio"/> 10 Factors	

OK

FIG. 4C



A screenshot of a software dialog box titled "Permanent Sample Rates". It contains two input fields at the top: "Company Name" and "Well Location". Below these are two main sections. The "Sample Rate" section has four radio button options: "Continuous", "10 Seconds", "30 Seconds", and "1 Minute". The "Store Time" section has seven radio button options: "Every Sample", "Every minute", "Every 5 minutes", "Every 15 minutes", "Every 30 minutes", and "Every hour". To the right of these sections is a "24 Hour Log Time" section with a vertical list of radio button options from "00:00 am" to "10:00 am". At the bottom center is a "DONE" button.

Permanent Sample Rates

Company Name:

Well Location:

Sample Rate:

- ☐ Continuous
- ☒ 10 Seconds
- ☐ 30 Seconds
- ☐ 1 Minute

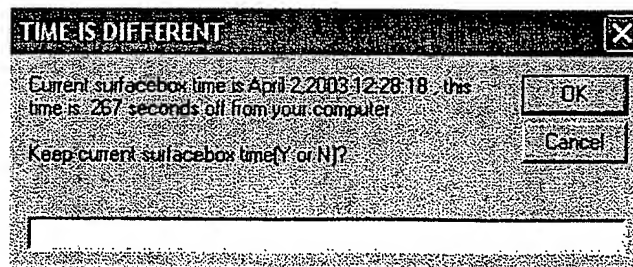
Store Time:

- ☐ Every Sample
- ☒ Every minute
- ☐ Every 5 minutes
- ☐ Every 15 minutes
- ☐ Every 30 minutes
- ☐ Every hour

24 Hour Log Time:

- ☐ 00:00 am
- ☐ 01:00 am
- ☐ 02:00 am
- ☐ 03:00 am
- ☐ 04:00 am
- ☐ 05:00 am
- ☐ 06:00 am
- ☐ 07:00 am
- ☒ 08:00 am
- ☐ 09:00 am
- ☐ 10:00 am

DONE

FIG. 4D

A screenshot of a software dialog box titled "TIME IS DIFFERENT". It contains a text message about a time difference between a surfacebox and a computer. Below the message are "OK" and "Cancel" buttons. At the bottom is an empty text input field.

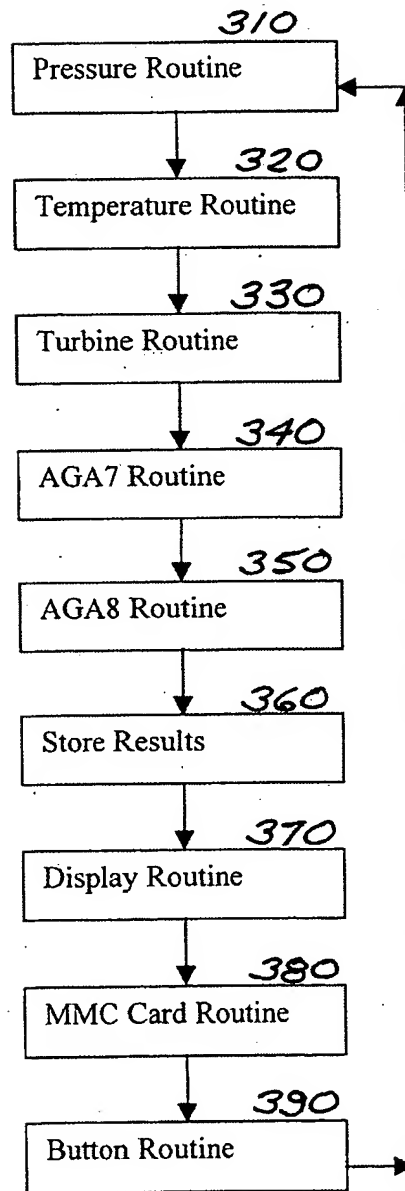
TIME IS DIFFERENT

Current surfacebox time is April 2, 2003 12:28:18 - this time is 257 seconds off from your computer.

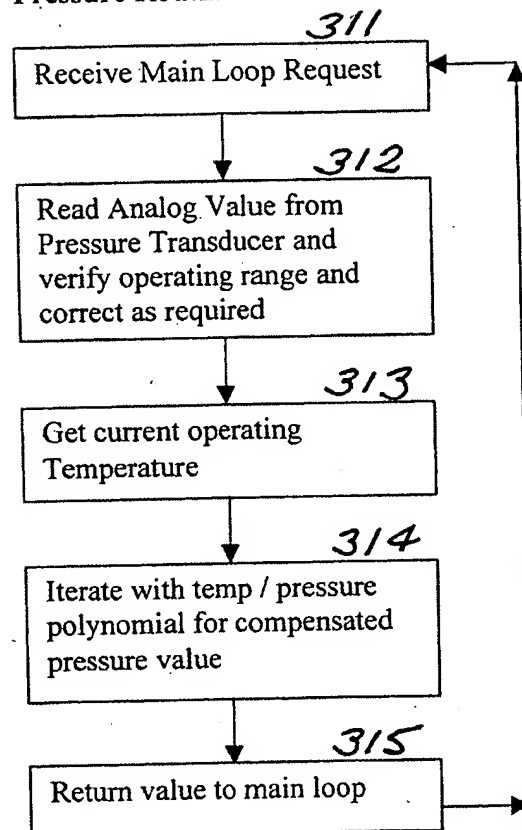
Keep current surfacebox time(Y or N)?

OK Cancel

FIG. 4E

Main Operating LoopFIG. 5

Pressure Routine

FIG. 5A

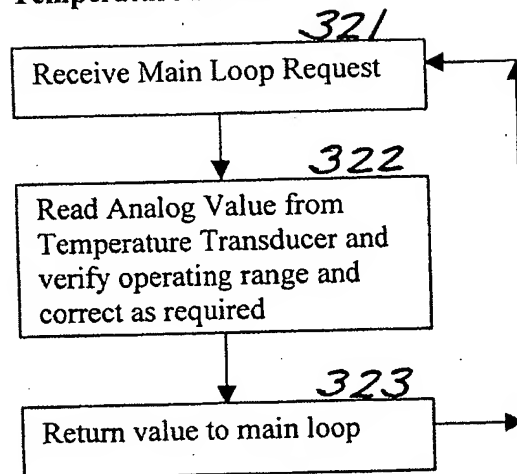
Temperature Routine

FIG. 5B

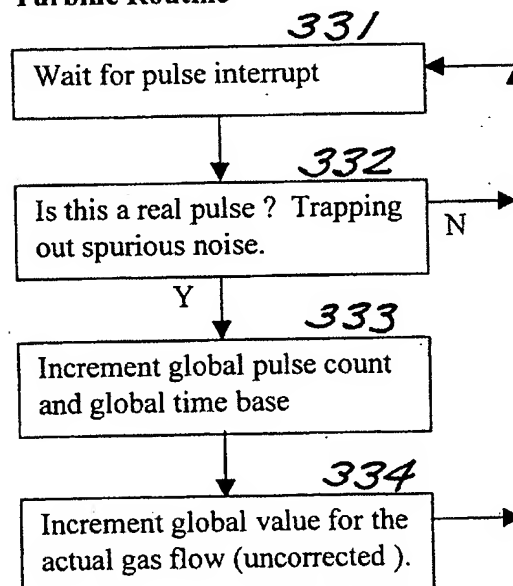
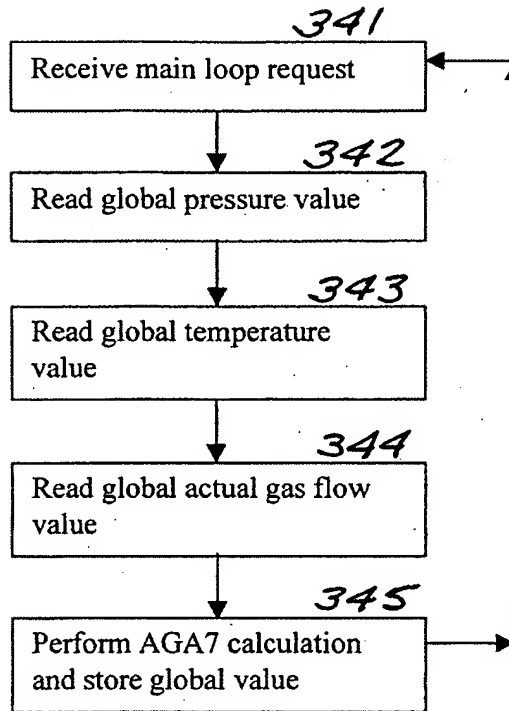
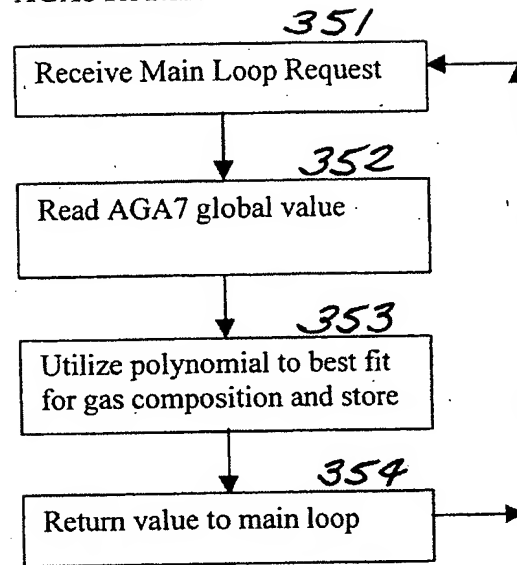
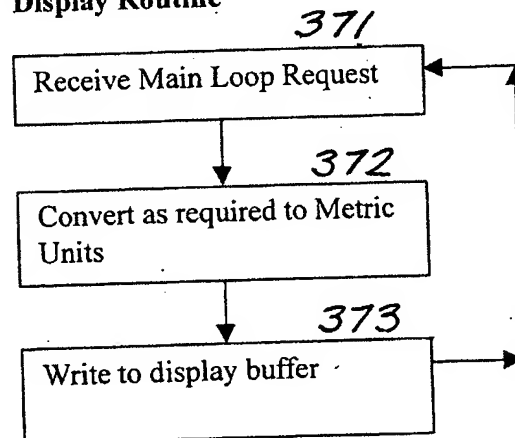
Turbine Routine

FIG. 5C

AGA7 RoutineFIG. 5D

AGA8 RoutineFIG. 5E**Display Routine**FIG. 5F

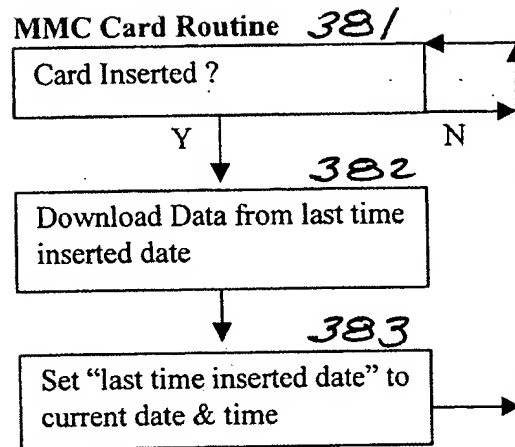


FIG. 5G

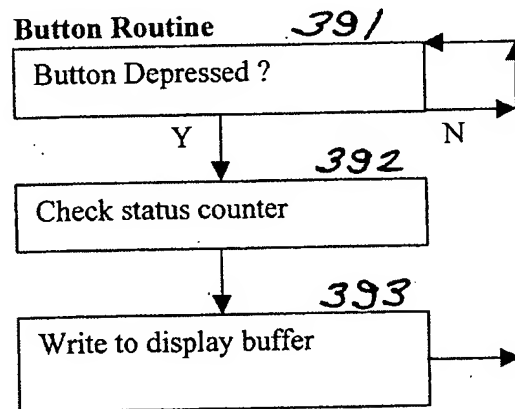


FIG. 5H